DOCUMENT RESUME

ED 327 084 HE 024 098

TITLE Research Student and Supervisor. An Approach to Good Supervisory Practice.
INSTITUTION Council of Graduate Schools in the U.S., Washington, D.C.
PUB DATE 90
NOTE 17p.
AVAILABLE FROM Council of Graduate Schools, One Dupont Circle, N.W., Suite 430, Washington, DC 20036-1173.
PUB TYPE Viewpoints (120) --

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; *Academic Persistence; *Doctoral Programs; *Graduate Study; Higher Education; Research Papers (Students); *Student Evaluation; *Student Research; *Supervisory Methods; Teacher Influence

ABSTRACT

The lack of a planned, disciplined, and well-supervised approach to research which frustrates a student's timely completion of a Ph.D. program is addressed. Some practices are discussed which, if adopted, could lead many more students to complete their Ph.D. expeditiously. A framework is presented that is intended to help the student and the supervisor to recognize when things are starting to go wrong in the progress towards completing the Ph.D. program. Some of the reasons are discussed, most particularly those associated with research methods, problems of completion time or failure to complete. Guidelines are suggested for each stage of progress towards a completed Ph.D. program, as well as ways to enable both the supervisor and the student to recognize whether the student should continue on for the Ph.D. A checklist on good supervisory practice is provided, in question form, which reinforces the main points addressed in the report. Six references. (GLR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED327084

RESEARCH STUDENT and SUPERVISOR

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Council of Graduate Schools
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

cgs

An Approach to Good Supervisory Practice

HE 024 098

Council of Graduate Schools
Washington, D.C.

TABLE OF CONTENTS

Introduction	v
Beginnings	1
The Framework	1
Time The Enemy	2
The Early Stages	3
The Middle Stages	6
The Final Stages	7
The Need to Submit a Dissertation	9
A Final Comment	9
Conclusion	10
A Checklist on Good Supervisory Practice	11
Further Readings	12

Introduction

This pamphlet is an adaptation of one with the same name published in Great Britain by the Science and Engineering Research Council. It has been modified to make it more relevant to Ph.D. education in North America and to broaden it somewhat beyond the sciences and engineering. Because of the good sense and style of the original, however, most of the language and ideas remain as they appear there.

The original document was produced in 1982 as a result of concern about the increasing amount of time it was taking for students to complete the Ph.D. degree in Great Britain. The same concern exists in North America, and while the systems differ in many respects, one is clearly the same: the importance of the relationship between students and their research supervisors.

The responsibility for completing a Ph.D. degree within a reasonable length of time is shared by the student and the supervisor. The purpose of this document is to discuss ways to make each of them more aware of the problems, and to suggest ways for improving the process.

We have prepared this North American version in the belief that it will be useful to faculty and graduate students engaged in research together. We thank R. J. Kavanagh, Director General, Scholarships and International Programs, Natural Sciences and Engineering Research Council of Canada, for bringing the original publication to our attention, and Professor E. W. J. Mitchell, Chairman of the Science and Engineering Research Council of Great Britain, for granting permission to adapt their document.

Jules B. LaPidus
President
Council of Graduate Schools
Spring 1990

Research Student and Supervisor

Beginnings

A peculiarly close relationship exists between the research student and supervisor. They start as master and pupil and ideally end up as colleagues. Obviously, under these circumstances, it is desirable that the student and supervisor should be carefully matched. But this can be extremely difficult. In many cases the student has come from another university and there has been little or no chance for talk between the parties to allow both sides to make up their minds about each other. To deal with this problem, some departments provide opportunities for students to discuss research activities with those members of the faculty with whom they share scholarly interests. This takes place before the student chooses a research supervisor. Of course, some students select a particular institution for graduate work because of the desire to work with a specific individual. In either case, the personal as well as the intellectual characteristics of both parties need to be taken into account in forming this partnership if it is to lead to a productive working relationship that is challenging to both of them and that gives the student the best chance to complete the Ph.D. degree.

There are two aspects to supervision. The first and more important has to do with creativity and involves the ability to select problems, to stimulate and enthuse students, and to provide a steady stream of ideas. The second aspect is concerned with the mechanics of ensuring that the student makes good progress.

There is no way to provide any general guidance on the first matter since it is so dependent on the characteristics of the persons involved. The purpose of this document is to point to some ways of ensuring good, steady and satisfactory progress. We believe that to achieve this a definite plan is required which may well be different not merely for each discipline, but probably for each department, and in some cases, for each student. We will refer to this plan as a framework since it serves as a structure for supporting and defining the student's graduate program. With such a framework, it will be much easier for the supervisor and student to recognize when things are starting to go wrong.

The Framework

The existence of a framework, accepted within the department, which marks out the stages that a student should be expected to

have completed at various points in the period of study, is a key element in good supervisory practice. Students will be helped by knowing that they are expected to reach certain stages at certain times and will come to accept that part of their training is, in fact, learning how to manage their time and organize their activities—something which they will certainly have to do if they are going to make a success of any job in later life. They will also be helped by having a clear understanding of the supervisor's commitment to their graduate program.

The nature of the framework should be made clear to students in writing by the departments. The framework should include regular meetings with the supervisor, a method of assessing course work, and an examination for admission to candidacy that evaluates the student's potential for independent work. Whatever the framework chosen, the aim is to encourage the student to develop good work habits, to train the student to establish a personal schedule, and to assure the student that evaluation of progress in the program is fair and objective.

Time the Enemy

Before going further, it is worth looking at some of the reasons, most particularly those associated with research, for long completion times or failure to complete. There can be no doubt that the major enemy is time. Everything takes much longer than the inexperienced student expects. Students, with the help of their supervisors, need to plan their time carefully if they are to complete their Ph.D. dissertations* in a reasonable period of time. For a student who has just started graduate work the necessity for advance planning may not be particularly obvious. This leads immediately to one quite common reason for late completion—namely, a slow start in research. Particularly in those disciplines characterized by a large body of received knowledge and a highly structured core curriculum, students may have operated in a passive mode for a long time, and making the change to the more critical, questioning role of the independent scholar may be difficult. However, if the student does not quickly become engaged in the intellectual issues in the discipline, including the formulation of research ideas and projects, and such other initial activities as are desirable, the result is that the remaining portion of the student's activities is always a scramble and the program inevitably slips.

*The terms "dissertation" and "thesis" may be considered interchangeable for the purpose of this document.

A second common cause of delay is the student and/or supervisor who is never satisfied, who can always think of a way to improve results—in short, who cannot bring anything to a conclusion. Perfectionism can be a virtue, but if a student would only write up what already has been achieved, and discuss it frequently with the supervisor, it would almost certainly clarify whether any improvement is actually necessary or desirable, what additional amount of effort is required, and whether it is sensible to attempt that amount of work in the time available. This process contributes to the effective planning of time.

A third common cause of delay is distraction from the main line of enquiry. Some students may get "hooked" on computing, largely because of the sheer pleasure obtained from manipulating the computer. Others may not be able to resist the temptation to explore every side path and byway that arises during the course of any research project. In any event, these and other similar distractions inevitably lead to delayed completion of the dissertation.

Most supervisors have come across these problems and have tried to cope with them. Their success in doing so has often depended on the ability of both student and supervisor to realize that the Ph.D. program is the beginning rather than the sum of the student's career, and to work together to ensure that the program is completed without undue delays.

The Early Stages

It is during the first two years that an appropriate framework is most important, for it is here that a decision will usually be made as to whether the student is to continue for the Ph.D. or not. An experienced supervisor will probably have little difficulty in deciding by the end of this time, but the student must be able to see the decision as just and fair, as indeed so must others working in the same department. For this to happen, it is important that the student should know at various stages how well things are going, and must feel that proper direction is being provided by the supervisor. Above all, there must be candid and open communication between supervisor and student. While in normal circumstances supervisors are likely to have frequent contacts with their students at this stage, it is very important to have a regular time during which the student and supervisor meet to discuss problems. Fixing a time ensures that a busy supervisor does not inadvertently neglect meeting with students, and also provides a convenient way for the supervisor to ensure that certain things have been done.

The student receives much of the formal training that is considered necessary and desirable in many Ph.D. programs during the first two years. The form of this training will, of course, vary with the nature of the discipline and the department. In many programs it is common to provide graduate courses and to examine the students in these courses, usually by written tests. In other cases the course work may be augmented to a greater or lesser degree by directed reading or individual studies accompanied by periodic evaluations.

However, not all of the first two years will be spent on the formal portion of the introductory training. Many other activities should be initiated in this period, particularly those related to becoming immersed in the field and getting started in research. They will vary enormously according to the nature of the program, and it is during this time that the student should be made aware of the nature and pace of work that is expected and appropriate to the field of study. The most important thing to learn is that completing the program in a reasonable period of time will require long hours of hard work and effective use of time.

Once a student and faculty member have agreed to work together, the next matter is the choice of the student's research topic. In some areas the student becomes involved in one of the main ongoing lines of research within the department. In other areas, the supervisor may have a general idea of several research possibilities in various directions, and in this case it is possible for an able student to play a significant role in the final decision on the research topic. Some students may have a very clear idea of the topic they wish to work on, and here, the student and supervisor must work together to define a project that can be completed in a reasonable period of time within the context of the Ph.D. program. In any case, the final decision must be reached reasonably early. Delay is too easy, particularly if a large amount of the first two years is devoted to course work and related activities.

In most disciplines, in proposing a particular research topic, the supervisor should be confident that given hard work and reasonable ability, it is fairly certain that the student will bring matters to a satisfactory conclusion. But occasionally an exciting line of research appears in which the outcome is more uncertain, and in these cases the supervisor should have a fallback position in case some unexpected difficulty arises.

What follows is based on the assumption that students begin to be involved in research during this first stage in graduate study. In the sciences and engineering, this represents the usual scenario. In

the humanities, students may not begin their research until later, often after admission to candidacy. In all cases, however, students embarking on Ph.D. programs need to be thinking about the kind of work they want to do for their dissertations, and refining their thoughts through reading and discussions with their supervisors.

In most fields a literature survey forms an important starting portion of the work, and this should be carried out in the early stages. During this period the sharpness of the definition of the research topic should increase markedly. The student should also be trained in the virtues of the systematic recording of data and/or other relevant information and the importance of keeping and maintaining a clear record of everything that has been undertaken. In short, by the end of the first two years the student should have a fairly clear idea of what the nature and purpose of the research is to be, should understand the necessary background information of relevant work already carried out, and should possess a systematic record of all that he or she has accomplished and attempted. Finally, through the assessment of written reports prepared by the student, the supervisor should know whether the student is capable of writing a coherent, connected account of the work. A weakness in this area will cause the student a lot of trouble later on, and must not, therefore, be ignored.

At this point, the student should be ready to take the examination for admission to candidacy. In our view this examination should always include an oral presentation evaluated by several people in addition to the supervisor. Ideally, at least one of the examiners should be a person who is very familiar with the specific area of the student's interest (but is not the supervisor) and another one who is at most just working in the general area. This arrangement has the virtue that the student can be examined in depth by the expert, but is also likely to be asked simple but fundamental questions by the non-expert.

In summary, there should exist in the first two years a framework which will enable both the supervisor and the student to recognize whether the student should continue on for the Ph.D. It should also ensure that the student has adopted appropriate and relevant methods of work so as to guarantee that the remainder of the time is spent fruitfully, with a high probability of completing the task within the allotted span. A clear and well-defined process of assessment allows the student to know where he or she stands, makes for a reasonably objective judgment of his or her suitability for further work, and can be of value in detecting and correcting problems.

The Middle Stages

Upon successful completion of the first part of the program, the student will enter the middle stages knowing what is to be done, with a thorough background knowledge and, in many cases, with a start made on the research work itself. An effective framework in the first years will have encouraged the student, one hopes, not merely to accept, but to expect a suitable framework for the remainder of the program. Indeed, much of what we have said about the early stages applies with equal force to the subsequent years, and departmental communications should emphasize this.

It is in the middle stages that the student should obtain the bulk of the results which are going to form the main body of the dissertation. Obviously, it would be ideal if appropriate milestones could be established, determining the points which the student should have reached at various times. One must, however, remember that we are talking about original research where, by definition, things do not necessarily go as intended. Nevertheless, it is a good idea at this stage for the student and supervisor together to do their best to lay out a critical path. This critical path should be reviewed at various times throughout the year, and become more sharply defined as time goes by.

The plan of campaign should contain ample allowance for unexpected additional work. This is the nature of research. We are looking for the new and unexpected. Because of this, it is extremely important that fairly early in this stage the supervisor assess whether it is likely that the student will be able to bring the work to a timely conclusion, or whether the difficulties are such that the student must modify the topic or switch to another more likely to produce a dissertation in a reasonable period of time.

One cannot put too much emphasis on the need to keep systematic records. There are several reasons for this. First, without systematic records the student will have considerable difficulty when it comes to a final writing up. Second, it may not be until later, when further work has been done, that it is possible to obtain a proper grasp of the import of the earlier work. Once again, this will be very difficult without systematic records. Third, it is perfectly possible that as a result of later work, perhaps by other people, a previously abandoned line of research needs to be reinvestigated, and proper records will save time-wasting repetition of earlier work.

It is almost implicit in what has been said so far that we have been talking about the student who is engaged in a project in collaboration with only the supervisor. This is not the only way of carrying out research; more and more these days, particularly in the sciences, research is carried out in collaborative teams. This

presents somewhat different problems, particularly in the middle stage. Where teamwork is involved, there will usually be several senior academics who understand the necessity of meeting deadlines and of ensuring the work is progressing in an efficient and satisfactory manner. The problem in this area is not so much to set up milestones for the project as a whole, but to define the student's specific contribution to the work, and to make sure not only that those contributions are made, but that the student has a thorough grasp of the project as a whole.

When many people are involved there is far less chance that the student will fall behind or go off track with nobody noticing, since others are dependent on the student completing the tasks assigned. The bigger risk here is of not seeing the forest for the trees. In this case, therefore, it is almost essential for the student to be asked occasionally to explain to the group not merely what he or she is up to, how much has been achieved and what problems are foreseen, but also to explain how this fits into the whole project. Obviously, a similar process is highly desirable for all students, not just for those involved in group research. There is nothing like having to explain yourself to other people for clarifying the mind.

In mastering all the details of a particular research project students sometimes do not realize that colleagues may be more interested in the wider aspects of the project and its impact on the whole body of knowledge, and have different views about the significance of the research. For these reasons, students should be given the opportunity, particularly toward the end of the period of research training, to present the results of the research at a departmental seminar involving faculty and graduate students. This kind of experience will help greatly in concentrating the student's mind on the structuring of the remaining portion of the research.

The Final Stages

Sometime in the early part of the final year, depending on the field, the student should have completed the actual research work so that all that remains is the production of the dissertation. The time it takes to write a dissertation, like that required for other activities of this kind, is usually longer than anticipated. The writing of the first draft should have started long before this stage. A general introduction should be drafted as soon as possible, even if it has to have gaps. Equally, it will be a great help to the student if a rough draft is written on each part of the total project as that part is completed. The use of personal computers greatly facilitates this approach and makes the writing of the full dissertation much

easier. Once again, milestones become very important, as slippage now usually means slippage in the final date of submission. There are various questions which can be asked at this stage, and the wise student will make a list of them and their draft answers.

For example, what questions has the work so far answered, and what open questions has it left or raised? What is the relation of the work completed to previous work done by other people? Does the student really understand the work that has gone before? What comments can be made about it in light of the student's own work?

By now the student should have acquired a substantial list of references and copies of the most relevant papers. It is advisable at this stage for the student to re-read some of the papers to establish clearly the relation of previous work to the dissertation. If the student's work has been carefully carried out, one likely result may be to throw some doubts on previous work. It is important to study this carefully and to try to reconcile any differences that have arisen.

The dissertation may be the first really extended piece of work that the student has ever written. It is worthwhile, therefore, to spend some time in laying out a plan for writing the dissertation which can be discussed with the supervisor. Different departments in universities have different rules regarding the amount of assistance that a supervisor may give to a student in this portion of the work, but it is generally accepted that by and large the dissertation should be the student's unaided effort.

Two particular points must be mentioned here. First, the dissertation should be no longer than necessary. It should demonstrate that the student understands the background to the research, explain clearly the methods used, present the results, and discuss the findings within an appropriate framework. Verbosity and padding should be avoided at all stages; they detract from the issues at hand and provide easy targets for criticism by examiners.

Second, unless the student is a particularly gifted writer, the use of one of the many books that are now available on good writing will likely improve the dissertation. There is more in this than making the dissertation a pleasure for the examiners to read. Woolly writing is frequently a reflection of woolly thinking. A student who writes clearly will soon discover that a problem of expression often arises from a lack of understanding, whereas a student who writes poorly can write rubbish without even realizing it.

The Need to Submit a Dissertation

There may be some who would argue that the completion* rate does not really matter; that many students who complete late or even fail to complete at all nevertheless profit substantially from their period of research, and failure to submit a Ph.D. dissertation should not be regarded as a failure *per se*. There is indeed an element of truth in this. A substantial number of students who fail to submit a Ph.D. dissertation do so because they become involved in some other work. They leave the department with every intention of writing up the dissertation, but find their days full, working in an interesting job which they obtained partly as a result of their training, and as time goes by the importance of submitting a dissertation recedes steadily into the background and finally dies. Apart from actually writing their dissertation they have performed all the necessary things that one expects from a Ph.D. student. They have been well trained, they have learned the techniques of their subject and, in many cases, may have published papers of some significance.

It is still true, however, to say that a substantial portion of the successful research training of a student lies in ensuring that he or she has the ability to write an extended and coherent report on the work that has been done. In those cases where papers are published during the course of Ph.D. research, the supervisor is usually so closely involved, either through editing the manuscript or as a co-author, that the student will not have the sole responsibility for producing the written report. Thus, the writing of the Ph.D. dissertation may be the one single unaided piece of work that a student undertakes. The successful completion of this final part of Ph.D. training marks the transition from student to independent scholar.

A Final Comment

In some fields, when the work has gone well and opened up prospects for future research, the supervisor may suggest that the student might like to consider a two or three-year continuation as a postdoctoral research associate. Experience shows that if the student accepts, and is appointed before handing in the dissertation, in the vast majority of cases the rate of progress on the dissertation slows dramatically, and a delay of six months to a year is almost inevitable. This may sometimes be good for scholarship, but may not be fair to the student. We believe that whatever the

*Completion is defined as the submission of the dissertation to the appropriate authorities.

circumstances, the student should not be allowed to take up the new position until the dissertation has been submitted. This provides an incentive for completion and affirms the student's responsibility for finishing the dissertation.

Conclusion

The lack of a planned, disciplined, and well-supervised approach to research, coupled with the temptations to undertake other research activities or employment, can frustrate the timely completion of the Ph.D. program. We have discussed some of the practices which we think, if generally adopted, would lead many more students to complete their Ph.D. expeditiously. We end with a checklist, in question form, which brings out the main points we have tried to make.

A Checklist on Good Supervisory Practice

1. Is there a departmental document, available to students and supervisors, that describes the department's view on good supervisory practice?
2. What steps are taken to try and make a good match between a supervisor and the prospective student?
3. Does the student present a report during the first two years which is assessed by people other than the supervisor?
4. Does the supervisor see the student often enough?
5. Are there regular occasions when both the student's progress and background knowledge of the subject are assessed?
6. Is the assessment procedure seen as satisfactory by both supervisor and student?
7. Are there occasions when the student has to make a public presentation and are these presentations satisfactory?
8. How is the topic of research refined in the first two years?
9. When is a long-term program of research laid out and a critical path defined?
10. Does the supervisor periodically check the student's record keeping to see whether it is systematic?

The above questions are aimed largely at the supervisor and department, though some of them apply equally to the student. There are a few more questions directed specifically to the student:

1. Have you tried to plan your work systematically?
2. Have you identified the major difficulties?
3. Do you understand the relevant references?
4. Are your records in good order and could you answer a question on something you did six months ago?
5. Have you drafted the first version of any portion of the work that has been completed?
6. Do other people find your written work difficult to understand?
7. Are there any tables, figures or other matter which could usefully be prepared at an early stage?

Further Readings

Altick, Richard D. *The Art of Literary Research*. 3rd ed. New York: W. W. Norton, 1981.

Council of Graduate Schools. *The Doctor of Philosophy Degree*. Washington: Council of Graduate Schools, 1990.

Friedman, Nathalie. *Mentors and Supervisors*. New York: Institute of International Education, 1987.

National Academy of Sciences. *On Being A Scientist*. Washington: National Academy Press, 1989.

Pelikan, Jaroslav. *Scholarship and Its Survival*. Princeton: Princeton University Press, 1983.

Ziman, John M. *Public Knowledge*. Cambridge: Cambridge University Press, 1968.

Council of Graduate Schools
One Dupont Circle, N.W., Suite 430
Washington, D.C. 20036-1173
202-223-3791